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OA dated 6/20/06
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REMARKS

Further consideration of the subject application in light of the following remarks is respectfully requested. Claims 1-58 are pending, Claims 18-58 have been withdrawn pursuant to 35 U.S.C. §121, leaving Claims 1-17. No claims have been amended. No new claims have been added.

Claim Rejections Under 35 USC §103

Claims 1-17 have been rejected under 35 U.S.C. § 103(a) as being obvious over WO 02/16681 A1 to Richeson et al. (hereinafter Richeson) in view of WO 02/16480 A2 to Lin et al. (hereinafter Lin.)

Applicants' invention relates to a catalyst support comprising the result of the combination of (a) a support comprising hydroxyl groups; (b) a capping agent comprising a boron containing Lewis acid; and (c) an ionic activator, wherein at least some of the capping agent does not form a support bound activator.

Richeson is directed to a meltblown fiber and a fabric manufactured from the fiber. The disclosed fiber comprising reactor grade polypropylene, typically produced from a metallocene catalyzed process. The metallocene of Richeson is part of a system that can include a fluorided support and a non-coordinating anion activator. Richeson specifically discloses that the methods of supporting ionic catalysts comprising metallocene cations and non-coordinating anions generally comprise either physical adsorption on traditional polymeric or inorganic supports that have been largely dehydrated and dehydroxylated, or using neutral anion precursors that are sufficiently strong Lewis acids to activate retained hydroxy groups in silica containing inorganic oxide or fluorided-modified supports such that the Lewis acid becomes bound to the support and a hydrogen of the hydroxy group is available to protonate the metallocene compounds. (See Page 23, lines 22-30.) Richeson thus discloses using the Lewis acid as a support bound activator.

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Applicants recite a catalyst support comprising a capping agent comprising a boron containing Lewis acid in combination with another ionic activator, subject to the limitation that at least some of the capping agent does not form a support bound activator. On Page 31, lines 8-27, Applicants define the capping agent as being able to combine with free hydroxyl groups on the support, rendering the support hydrophobic. Applicants further define the recited boron containing capping agents as being able to replace or otherwise inactivate the hydrogen on the SiOH function group (of the support) by bonding to the oxygen, forming an otherwise inert cap on the silanol group of the substrate. When the capping agent is used in combination with another ionic activator, at least some of the recited capping agent does not form a bound activator and thus, the capping agent is not involved in polymerization within a catalyst system. Applicants further recite the ionic activator may be a tetra-substituted borate compound, which forms a support bound activator on silanol groups which are not capped by the boron containing Lewis acid capping agent.

As Applicants disclose, the capping agent is believed to replace or otherwise inactivate the hydrogen of the SiOH functional group of the support by binding to the oxygen, thus forming an otherwise inert cap on the silanol group of the support. Applicants' presently claimed invention does not require an additional catalyst or other components to proceed. As such, Applicants' presently claimed invention allows for a single step process of effectively capping the support with hydrogen gas being formed as the only byproduct. This is in contrast to other capping agents, which result in by-products which may adversely affect the catalytic activity and/or stability of the support once contacted with the activator. In addition to the clean and facile reaction, Applicants data suggests that the similarity of the recited capping agent, as compared to known activators, results in an improvement in catalytic activity. The benefits of this novel and non-obvious invention are demonstrated in the comparison between Example 1 and Comparative Example 2, wherein the use of Applicants' recited catalyst support comprising a capping agent comprising a boron containing Lewis acid; and an ionic activator, wherein at

least some of the capping agent does not form a support bound activator, results in a 255% increase in the activity of the catalyst.

In contrast, Richeson merely discloses a boron containing Lewis acid which forms a support bound activator. Richeson fails to disclose a capping agent in combination with another ionic activator. Richeson thus fails to disclose or suggest a capping agent comprising a boron containing Lewis acid in combination with an ionic activator, wherein at least some of the capping agent does not form a support bound activator.

Lin is directed to isotactic polypropylene films formed from propylene polymer formed by polymerization with a fluorided silica supported catalyst. At Page 22, line 27 to Page 23, line 3, Lin discloses the same paragraph (above) as recited by Richeson. Lin fails to disclose or suggest a capping agent comprising a boron containing Lewis acid in combination with an ionic activator, wherein at least some of the capping agent does not form a support bound activator.

Accordingly, neither Richeson nor Lin, either alone or in combination disclose all the limitations recited by Applicants. As such, Richeson in combination with Lin cannot reasonably be found to render Applicants' presently claimed invention obvious. Applicants respectfully request the rejection be withdrawn.

Respectfully submitted,

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